

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD:Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM114356
2. Name of Operator CIMAREX ENERGY COMPANY OF CO Contact: DEYSI FAVELA E-Mail: dfavela@cimarex.com		6. If Indian, Allottee or Tribe Name
3a. Address 600 NORTH MARIENFELD STREET SUITE 600 MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-620-1964	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 23 T23S R30E SESE 0195FSL 0250FEL 32.170152 N Lat, 103.503761 W Lon		8. Well Name and No. SANDY FEDERAL 22H
		9. API Well No. 30-015-41792-00-X1
		10. Field and Pool, or Exploratory WILDCAT <i>FORTY NINE RIDGE B.S.</i>
		11. County or Parish, and State EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex Energy respectfully requests changes to the APD:

Directional Plan Change, 13-3/8" Casing Change/Surface casing cement - Casing shoe at 350', Rig Layout Change.

Approved:
KOP 9497'
EOC 10247'
MD 16339'
TVD 9900'

Accepted for record

NMOCD 105 SEE ATTACHED FOR CONDITIONS OF APPROVAL

6-23-14

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 20 2014

RECEIVED

JR 6/10/14

13-3/8" 48# H-40 STC set at 350'

Eng OK (RW) 5/20/14 Surface OK - Location must be downsized as shown in approved APD

14. I hereby certify that the foregoing is true and correct. Electronic Submission #246794 verified by the BLM Well Information System For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad Committed to AFMSS for processing by CATHY QUEEN on 05/28/2014 (14CQ0049SE)	
Name (Printed/Typed) DEYSI FAVELA	Title DRILLING TECH
Signature (Electronic Submission)	Date 05/23/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>/S/ STEPHEN J. CAFFEY</u>	Field Manager <u>JUN 11 2014</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office <u>CARLSBAD FIELD OFFICE</u>

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional data for EC transaction #246794 that would not fit on the form

32. Additional remarks, continued

40 sacks lead Class C + Bentonite + Calcium Chloride + LCM @ 13.5 ppg, 1.75 yld,
200 sacks tail Class C + LCM @ 14.8 ppg, 1.34 yld
10% Excess

Proposed:
KOP 10594'
EOC 11341'
MD 17993'
TVD 11100'

13-3/8" 48# J-55 ST&C Set at 350'(No Change in Setting depth)

Equivalent volume of single tail slurry

255 sacks tail Class C + Calcium Chloride @ 14.8 ppg, 1.34 yld

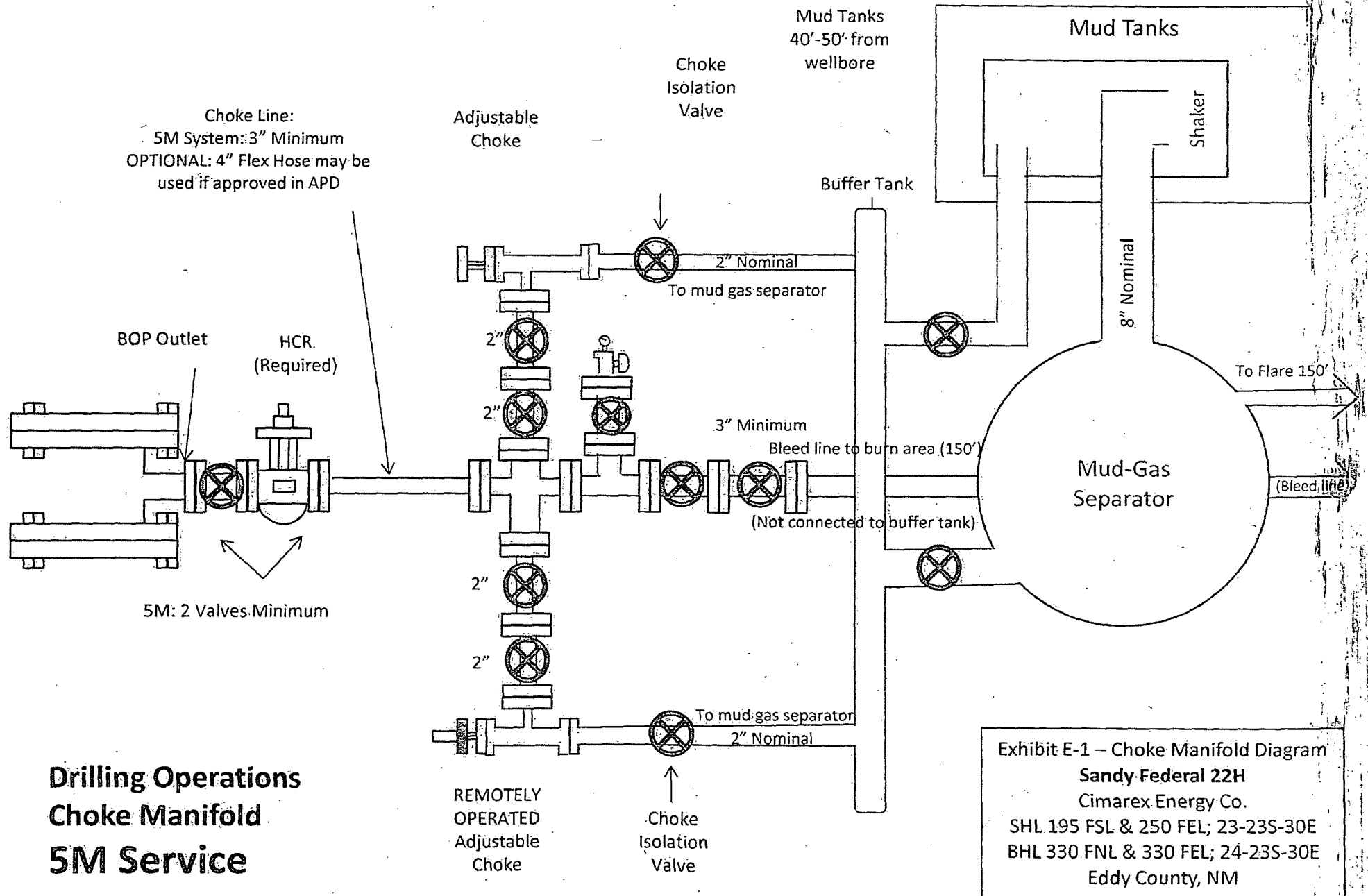
Reason: Lead volume is very small and it would be a logistically and economically advantage to pump a single cement slurry.

Rig Layout Change:

Due to the tank battery location, the rig is proposes to move the flare stack over to the SW side of location, as shown on the attached diagram.

5000# (M) BOP System:

Add 5000# (5M) BOP System for production hole. BOPS will be tested by an independent service company. The ram preventer, choke manifold, and safety valves will be tested as follows: On the surface casing, pressure tests will be made to 250 psi low and 2000 psi high. On the intermediate casing, pressure tests will be made to 250 psi low and 5000 psi high.



Drilling Operations Choke Manifold 5M Service

Drilling below ~~7"~~ Casing

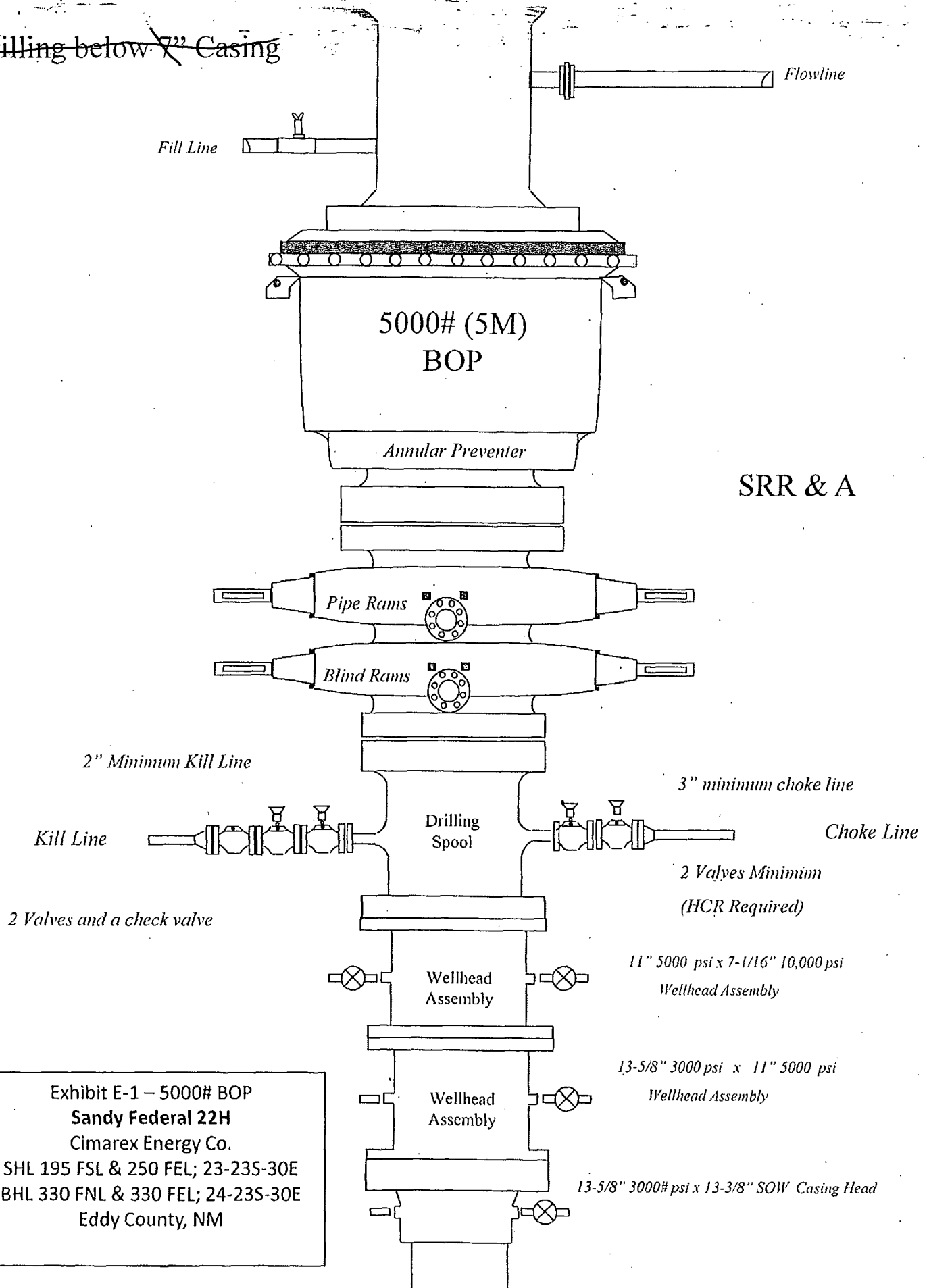


Exhibit E-1 – 5000# BOP

Sandy Federal 22H

Cimarex Energy Co.

SHL 195 FSL & 250 FEL; 23-23S-30E

BHL 330 FNL & 330 FEL; 24-23S-30E

Eddy County, NM



Cimarex Sandy Federal #22H Rev4 RJS 09-Sep-13 Proposal Report 100' Interpolated

(Def Plan)



Report Date: September 09, 2013 - 12:10 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: NorAm 23 / Cimarex Sandy Federal #22H
Well: Cimarex Sandy Federal #22H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Sandy Federal #22H Rev4 RJS 09-Sep-13
Survey Date: January 29, 2013
Tort / AHD / DDI / ERD Ratio: 99.749 * / 7156.903 ft / 6.063 / 0.645
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 17' 1.56837", W 103° 50' 37.50362"
Location Grid N/E Y/X: N 467313.200 RUS, E 692633.700 RUS
CRS Grid Convergence Angle: 0.2615 *
Grid Scale Factor: 0.99993531

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 47.519 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 3327.000 ft above
Seabed / Ground Elevation: 3299.000 ft above
Magnetic Declination: 7.553 *
Total Gravity Field Strength: 998.5014mgn (9.80665 Based)
Total Magnetic Field Strength: 48386.964 nT
Magnetic Dip Angle: 60.128 °
Declination Date: September 03, 2013
Magnetic Declination Model: BGGM 2013
North Reference: Grid North
Grid Convergence Used: 0.2615 *
Total Corr Mag North→Grid North: 7.2914 *

Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Cimarex Sandy Federal #22H SHL	0.00	0.00	227.52	0.00	-3327.00	0.00	0.00	0.00	N/A	N/A	N/A	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	100.00	0.00	227.52	100.00	-3227.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	200.00	0.00	227.52	200.00	-3127.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	300.00	0.00	227.52	300.00	-3027.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	400.00	0.00	227.52	400.00	-2927.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	500.00	0.00	227.52	500.00	-2827.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	600.00	0.00	227.52	600.00	-2727.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	700.00	0.00	227.52	700.00	-2627.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	800.00	0.00	227.52	800.00	-2527.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	900.00	0.00	227.52	900.00	-2427.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1000.00	0.00	227.52	1000.00	-2327.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1100.00	0.00	227.52	1100.00	-2227.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1200.00	0.00	227.52	1200.00	-2127.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1300.00	0.00	227.52	1300.00	-2027.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1400.00	0.00	227.52	1400.00	-1927.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1500.00	0.00	227.52	1500.00	-1827.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1600.00	0.00	227.52	1600.00	-1727.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1700.00	0.00	227.52	1700.00	-1627.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1800.00	0.00	227.52	1800.00	-1527.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	1900.00	0.00	227.52	1900.00	-1427.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2000.00	0.00	227.52	2000.00	-1327.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2100.00	0.00	227.52	2100.00	-1227.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2200.00	0.00	227.52	2200.00	-1127.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2300.00	0.00	227.52	2300.00	-1027.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2400.00	0.00	227.52	2400.00	-927.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2500.00	0.00	227.52	2500.00	-827.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2600.00	0.00	227.52	2600.00	-727.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2700.00	0.00	227.52	2700.00	-627.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2800.00	0.00	227.52	2800.00	-527.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	2900.00	0.00	227.52	2900.00	-427.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3000.00	0.00	227.52	3000.00	-327.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3100.00	0.00	227.52	3100.00	-227.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3200.00	0.00	227.52	3200.00	-127.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3300.00	0.00	227.52	3300.00	-27.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3400.00	0.00	227.52	3400.00	73.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50

Comments	MD	Incl	Adm Ghd	TVD	TVDSS	VSEC	NS	EW	DLS	BR	TR	Northing	Easting	Latitude	Longitude
	3500.00	0.00	227.52	3500.00	173.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3600.00	0.00	227.52	3600.00	273.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3700.00	0.00	227.52	3700.00	373.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	3800.00	0.00	227.52	3800.00	473.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4000.00	0.00	227.52	4000.00	673.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4100.00	0.00	227.52	4100.00	773.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4200.00	0.00	227.52	4200.00	873.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4300.00	0.00	227.52	4300.00	973.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4400.00	0.00	227.52	4400.00	1073.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4500.00	0.00	227.52	4500.00	1173.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4600.00	0.00	227.52	4600.00	1273.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4700.00	0.00	227.52	4700.00	1373.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4800.00	0.00	227.52	4800.00	1473.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	4900.00	0.00	227.52	4900.00	1573.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5000.00	0.00	227.52	5000.00	1673.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5100.00	0.00	227.52	5100.00	1773.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5200.00	0.00	227.52	5200.00	1873.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5300.00	0.00	227.52	5300.00	1973.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5400.00	0.00	227.52	5400.00	2073.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5500.00	0.00	227.52	5500.00	2173.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5600.00	0.00	227.52	5600.00	2273.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5700.00	0.00	227.52	5700.00	2373.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5800.00	0.00	227.52	5800.00	2473.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	5900.00	0.00	227.52	5900.00	2573.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6000.00	0.00	227.52	6000.00	2673.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6100.00	0.00	227.52	6100.00	2773.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6200.00	0.00	227.52	6200.00	2873.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6300.00	0.00	227.52	6300.00	2973.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6400.00	0.00	227.52	6400.00	3073.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6500.00	0.00	227.52	6500.00	3173.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6600.00	0.00	227.52	6600.00	3273.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6700.00	0.00	227.52	6700.00	3373.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6800.00	0.00	227.52	6800.00	3473.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
	6900.00	0.00	227.52	6900.00	3573.00	-0.33	-0.22	-0.24	1.50	1.50	0.00	467312.98	692633.46	N 32 17 1.57	W 103 50 37.51
	7000.00	3.75	227.52	6999.96	3672.82	-2.94	-1.99	-2.17	1.50	1.50	0.00	467311.21	692631.53	N 32 17 1.55	W 103 50 37.53
	7100.00	2.25	227.52	7099.82	3772.82	-8.18	-5.52	-6.03	1.50	1.50	0.00	467307.68	692627.67	N 32 17 1.51	W 103 50 37.57
	7183.33	5.00	227.52	7182.91	3855.91	-14.54	-9.82	-10.72	1.50	1.50	0.00	467303.38	692622.98	N 32 17 1.47	W 103 50 37.63
Hold for 15' MD	7198.33	5.00	227.52	7197.85	3870.85	-15.84	-10.70	-11.68	0.00	0.00	0.00	467302.50	692622.02	N 32 17 1.46	W 103 50 37.64
Drop to Vertical @ 1.5'/100' DLS	7200.00	4.98	227.52	7199.51	3872.51	-15.99	-10.80	-11.79	1.50	1.50	0.00	467302.40	692621.91	N 32 17 1.46	W 103 50 37.64
	7300.00	3.48	227.52	7299.24	3972.24	-23.35	-15.77	-17.22	1.50	1.50	0.00	467297.43	692616.48	N 32 17 1.41	W 103 50 37.71
	7400.00	1.98	227.52	7399.12	4072.12	-28.11	-18.98	-20.73	1.50	1.50	0.00	467294.22	692612.97	N 32 17 1.38	W 103 50 37.75
	7500.00	0.48	227.52	7499.10	4172.10	-30.25	-20.43	-22.31	1.50	1.50	0.00	467292.77	692611.39	N 32 17 1.37	W 103 50 37.76
Hold Vertical to KOP	7531.67	0.00	227.52	7530.76	4203.76	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	7600.00	0.00	227.52	7599.10	4272.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	7700.00	0.00	227.52	7699.10	4372.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	7800.00	0.00	227.52	7799.10	4472.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	7900.00	0.00	227.52	7899.10	4572.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8000.00	0.00	227.52	7999.10	4672.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8100.00	0.00	227.52	8099.10	4772.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8200.00	0.00	227.52	8199.10	4872.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8300.00	0.00	227.52	8299.10	4972.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8400.00	0.00	227.52	8399.10	5072.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8500.00	0.00	227.52	8499.10	5172.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8600.00	0.00	227.52	8599.10	5272.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
	8700.00	0.00	227.52	8699.10	5372.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77

Comments	MD	Incl	Azim Grid	TVD	TVDSS	VSEC	NS	EW	DLS	BR	TR	Northing	Easting	Latitude	Longitude
	8800.00	0.00	227.52	8799.10	5472.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	8900.00	0.00	227.52	8899.10	5572.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9000.00	0.00	227.52	8999.10	5672.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9100.00	0.00	227.52	9099.10	5772.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9200.00	0.00	227.52	9199.10	5872.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9300.00	0.00	227.52	9299.10	5972.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9400.00	0.00	227.52	9399.10	6072.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9500.00	0.00	227.52	9499.10	6172.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9600.00	0.00	227.52	9599.10	6272.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9700.00	0.00	227.52	9699.10	6372.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9800.00	0.00	227.52	9799.10	6472.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	9900.00	0.00	227.52	9899.10	6572.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
	10000.00	0.00	227.52	9999.10	6672.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10100.00	0.00	0.00	227.52	10099.10	6772.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10200.00	0.00	0.00	227.52	10199.10	6872.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10300.00	0.00	0.00	227.52	10299.10	6972.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10400.00	0.00	0.00	227.52	10399.10	7072.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10500.00	0.00	0.00	227.52	10499.10	7172.10	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10593.50	0.00	0.00	227.52	10592.60	7265.60	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	32 17 1.37	W 103 50 37.77
10600.00	0.78	47.52	10599.10	7272.10	-30.33	-20.49	-13.68	-22.37	12.00	12.00	0.00	467292.72	692611.33	32 17 1.37	W 103 50 37.77
10700.00	12.78	47.52	10698.22	7371.22	-18.55	-13.68	-13.68	10.02	12.00	12.00	0.00	467300.67	692620.02	32 17 1.45	W 103 50 37.66
10800.00	24.78	47.52	10792.72	7465.72	13.59	9.18	10.02	47.70	12.00	12.00	0.00	467322.38	692643.72	32 17 1.66	W 103 50 37.39
10900.00	36.78	47.52	10878.47	7551.47	64.68	43.68	47.70	0.00	12.00	12.00	0.00	467356.88	692681.40	32 17 2.00	W 103 50 36.95
11000.00	48.79	47.52	10951.73	7624.73	132.48	89.47	97.70	0.00	12.00	12.00	0.00	467402.66	692731.40	32 17 2.45	W 103 50 36.36
11100.00	60.79	47.52	11009.29	7682.29	214.03	144.54	157.65	0.00	12.00	12.00	0.00	467457.73	692791.54	32 17 2.90	W 103 50 35.65
11200.00	72.79	47.52	11048.63	7721.63	305.77	225.51	206.49	0.00	12.00	12.00	0.00	467519.68	692859.19	32 17 3.60	W 103 50 34.87
11300.00	84.79	47.52	11068.00	7741.03	404.68	297.72	272.82	0.00	12.00	12.00	0.00	467585.80	692931.40	32 17 4.25	W 103 50 34.00
11341.28	89.74	47.52	11070.00	7743.00	444.90	300.45	328.12	0.00	12.00	12.00	0.00	467613.63	692961.80	32 17 4.53	W 103 50 33.67
11400.00	89.74	47.52	11070.26	7743.26	503.62	340.11	371.43	0.00	0.00	0.00	0.00	467653.29	693005.10	32 17 4.92	W 103 50 33.16
11500.00	89.74	47.52	11070.71	7743.71	603.62	407.64	445.18	0.00	0.00	0.00	0.00	467720.82	693078.85	32 17 5.58	W 103 50 32.30
11600.00	89.74	47.52	11071.16	7744.16	703.62	475.18	518.93	0.00	0.00	0.00	0.00	467788.34	693152.59	32 17 6.25	W 103 50 31.43
11700.00	89.74	47.52	11071.60	7744.60	803.62	542.71	592.68	0.00	0.00	0.00	0.00	467855.87	693226.34	32 17 6.91	W 103 50 30.57
11800.00	89.74	47.52	11072.05	7745.05	903.62	610.24	665.43	0.00	0.00	0.00	0.00	467923.40	693300.08	32 17 7.58	W 103 50 29.71
11900.00	89.74	47.52	11072.50	7745.50	1003.61	677.77	740.18	0.00	0.00	0.00	0.00	467990.93	693373.83	32 17 8.24	W 103 50 28.85
12000.00	89.74	47.52	11072.95	7745.95	1103.61	745.31	813.93	0.00	0.00	0.00	0.00	468058.46	693447.57	32 17 8.91	W 103 50 27.98
12100.00	89.74	47.52	11073.39	7746.39	1203.61	812.84	887.68	0.00	0.00	0.00	0.00	468125.99	693521.32	32 17 9.57	W 103 50 27.12
12200.00	89.74	47.52	11073.84	7746.84	1303.61	880.37	961.43	0.00	0.00	0.00	0.00	468193.51	693595.07	32 17 10.24	W 103 50 26.26
12300.00	89.74	47.52	11074.29	7747.29	1403.61	947.91	1035.18	0.00	0.00	0.00	0.00	468261.04	693668.81	32 17 10.90	W 103 50 25.39
12400.00	89.74	47.52	11074.74	7747.74	1503.61	1015.44	1108.93	0.00	0.00	0.00	0.00	468328.57	693742.56	32 17 11.57	W 103 50 24.53
12500.00	89.74	47.52	11075.19	7748.19	1603.61	1082.87	1182.68	0.00	0.00	0.00	0.00	468396.10	693816.30	32 17 12.23	W 103 50 23.67
12600.00	89.74	47.52	11075.63	7748.63	1703.61	1150.50	1256.43	0.00	0.00	0.00	0.00	468463.63	693890.05	32 17 12.90	W 103 50 22.81
12700.00	89.74	47.52	11076.08	7749.08	1803.61	1218.04	1330.16	0.00	0.00	0.00	0.00	468531.16	693963.79	32 17 13.56	W 103 50 21.94
12800.00	89.74	47.52	11076.53	7749.53	1903.61	1285.57	1403.93	0.00	0.00	0.00	0.00	468598.68	694037.54	32 17 14.23	W 103 50 21.08
12900.00	89.74	47.52	11076.98	7749.98	2003.60	1353.10	1477.68	0.00	0.00	0.00	0.00	468666.21	694111.28	32 17 14.89	W 103 50 20.22
13000.00	89.74	47.52	11077.43	7750.43	2103.60	1420.64	1551.43	0.00	0.00	0.00	0.00	468733.74	694185.03	32 17 15.56	W 103 50 19.36
13100.00	89.74	47.52	11077.88	7750.88	2203.60	1488.17	1625.18	0.00	0.00	0.00	0.00	468801.27	694258.77	32 17 16.22	W 103 50 18.49
13200.00	89.74	47.52	11078.33	7751.33	2303.60	1555.70	1698.93	0.00	0.00	0.00	0.00	468868.80	694332.52	32 17 16.88	W 103 50 17.63
13300.00	89.74	47.52	11078.78	7751.78	2403.60	1623.24	1772.68	0.00	0.00	0.00	0.00	468936.33	694406.26	32 17 17.55	W 103 50 16.77
13400.00	89.74	47.52	11079.23	7752.23	2503.60	1690.77	1846.43	0.00	0.00	0.00	0.00	469003.86	694480.01	32 17 18.21	W 103 50 15.91
13500.00	89.74	47.52	11079.67	7752.67	2603.60	1758.30	1920.18	0.00	0.00	0.00	0.00	469071.38	694553.75	32 17 18.88	W 103 50 15.04
13600.00	89.74	47.52	11080.12	7753.12	2703.60	1825.69	1993.93	0.00	0.00	0.00	0.00	469138.91	694627.50	32 17 19.54	W 103 50 14.18
13700.00	89.74	47.52	11080.57	7753.57	2803.60	1893.37	2067.68	0.00	0.00	0.00	0.00	469206.44	694701.24	32 17 20.21	W 103 50 13.32
13800.00	89.74	47.52	11081.02	7754.02	2903.60	1960.90	2141.43	0.00	0.00	0.00	0.00	469273.97	694774.99	32 17 20.87	W 103 50 12.45
13900.00	89.74	47.52	11081.47	7754.47	3003.59	2028.43	2215.18	0.00	0.00	0.00	0.00	469341.50	694848.73	32 17 21.54	W 103 50 11.59
14000.00	89.74	47.52	11081.92	7754.92	3103.59	2095.97	2288.93	0.00	0.00	0.00	0.00	469409.03	694922.48	32 17 22.20	W 103 50 10.73
14100.00	89.74	47.52	11082.37	7755.37	3203.59	2163.50	2362.68	0.00	0.00	0.00	0.00	469476.56	694996.22	32 17 22.87	W 103 50 9.87
14200.00	89.74	47.52	11082.82	7755.82	3303.59	2231.03	2436.43	0.00	0.00	0.00	0.00	469544.09	695069.97	32 17 23.53	W 103 50 9.00
14300.00	89.74	47.52	11083.28	7756.28	3403.59	2298.57	2510.18	0.00	0.00	0.00	0.00	469611.61	695143.71	32 17 24.20	W 103 50 8.14
14400.00	89.74	47.52	11083.73	7756.73	3503.59	2366.10	2583.93	0.00	0.00	0.00	0.00	469679.14	695217.46	32 17 24.86	W 103 50 7.28

KOP - Build
12"/100' DLS Curve

Landing Point

Comments	MD (ft)	Incl (°)	Azm Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	14500.00	89.74	47.52	11084.18	7757.18	3603.59	2433.63	2657.68	0.00	0.00	0.00	469746.67	695291.20	N 32 17 25.53	W 103 50 6.41
	14600.00	89.74	47.52	11084.63	7757.63	3703.59	2501.17	2731.43	0.00	0.00	0.00	469814.20	695364.95	N 32 17 26.19	W 103 50 5.55
	14700.00	89.74	47.52	11085.08	7758.08	3803.59	2568.70	2805.18	0.00	0.00	0.00	469881.73	695438.69	N 32 17 26.86	W 103 50 4.89
	14800.00	89.74	47.52	11085.53	7758.53	3903.58	2636.23	2878.93	0.00	0.00	0.00	469949.26	695512.44	N 32 17 27.52	W 103 50 3.83
	14900.00	89.74	47.52	11085.98	7758.98	4003.58	2703.77	2952.68	0.00	0.00	0.00	470016.79	695586.18	N 32 17 28.19	W 103 50 2.96
	15000.00	89.74	47.52	11086.43	7759.43	4103.58	2771.30	3026.43	0.00	0.00	0.00	470084.32	695659.93	N 32 17 28.85	W 103 50 2.10
	15100.00	89.74	47.52	11086.88	7759.88	4203.58	2838.84	3100.18	0.00	0.00	0.00	470151.85	695733.67	N 32 17 29.52	W 103 50 1.24
	15200.00	89.74	47.52	11087.34	7760.34	4303.58	2906.37	3173.93	0.00	0.00	0.00	470219.38	695807.42	N 32 17 30.18	W 103 50 0.38
	15300.00	89.74	47.52	11087.79	7760.79	4403.58	2973.90	3247.68	0.00	0.00	0.00	470286.90	695881.16	N 32 17 30.85	W 103 49 59.51
	15400.00	89.74	47.52	11088.24	7761.24	4503.58	3041.44	3321.43	0.00	0.00	0.00	470354.43	695954.91	N 32 17 31.51	W 103 49 58.65
	15500.00	89.74	47.52	11088.69	7761.69	4603.58	3108.97	3395.18	0.00	0.00	0.00	470421.96	696028.65	N 32 17 32.18	W 103 49 57.79
	15600.00	89.74	47.52	11089.14	7762.14	4703.58	3176.50	3468.93	0.00	0.00	0.00	470489.49	696102.40	N 32 17 32.84	W 103 49 56.92
	15700.00	89.74	47.52	11089.60	7762.60	4803.58	3244.04	3542.68	0.00	0.00	0.00	470557.02	696176.14	N 32 17 33.51	W 103 49 56.06
	15800.00	89.74	47.52	11090.05	7763.05	4903.57	3311.57	3616.43	0.00	0.00	0.00	470624.55	696249.89	N 32 17 34.17	W 103 49 55.20
	15900.00	89.74	47.52	11090.50	7763.50	5003.57	3379.10	3690.18	0.00	0.00	0.00	470692.08	696323.63	N 32 17 34.84	W 103 49 54.34
	16000.00	89.74	47.52	11090.95	7763.95	5103.57	3446.84	3763.93	0.00	0.00	0.00	470759.61	696397.37	N 32 17 35.50	W 103 49 53.47
	16100.00	89.74	47.52	11091.41	7764.41	5203.57	3514.17	3837.68	0.00	0.00	0.00	470827.14	696471.12	N 32 17 36.17	W 103 49 52.61
	16200.00	89.74	47.52	11091.86	7764.86	5303.57	3581.71	3911.42	0.00	0.00	0.00	470894.67	696544.86	N 32 17 36.83	W 103 49 51.75
	16300.00	89.74	47.52	11092.31	7765.31	5403.57	3649.24	3985.17	0.00	0.00	0.00	470962.20	696618.61	N 32 17 37.49	W 103 49 50.88
	16400.00	89.74	47.52	11092.77	7765.77	5503.57	3716.77	4058.92	0.00	0.00	0.00	471029.73	696692.35	N 32 17 38.16	W 103 49 50.02
	16500.00	89.74	47.52	11093.22	7766.22	5603.57	3784.31	4132.67	0.00	0.00	0.00	471097.26	696766.10	N 32 17 38.82	W 103 49 49.16
	16600.00	89.74	47.52	11093.67	7766.67	5703.57	3851.84	4206.42	0.00	0.00	0.00	471164.78	696839.84	N 32 17 39.49	W 103 49 48.30
	16700.00	89.74	47.52	11094.13	7767.13	5803.57	3919.38	4280.17	0.00	0.00	0.00	471232.31	696913.59	N 32 17 40.15	W 103 49 47.43
	16800.00	89.74	47.52	11094.58	7767.58	5903.56	3986.91	4353.92	0.00	0.00	0.00	471299.84	696987.33	N 32 17 40.82	W 103 49 46.57
	16900.00	89.74	47.52	11095.03	7768.03	6003.56	4054.44	4427.67	0.00	0.00	0.00	471367.37	697061.07	N 32 17 41.48	W 103 49 45.71
	17000.00	89.74	47.52	11095.49	7768.49	6103.56	4121.98	4501.42	0.00	0.00	0.00	471434.90	697134.82	N 32 17 42.15	W 103 49 44.84
	17100.00	89.74	47.52	11095.94	7768.94	6203.56	4189.51	4575.17	0.00	0.00	0.00	471502.43	697208.56	N 32 17 42.81	W 103 49 43.98
	17200.00	89.74	47.52	11096.40	7769.40	6303.56	4257.05	4648.92	0.00	0.00	0.00	471569.96	697282.31	N 32 17 43.48	W 103 49 43.12
	17300.00	89.74	47.52	11096.85	7769.85	6403.56	4324.58	4722.67	0.00	0.00	0.00	471637.49	697356.05	N 32 17 44.14	W 103 49 42.26
	17400.00	89.74	47.52	11097.30	7770.30	6503.56	4392.11	4796.42	0.00	0.00	0.00	471705.02	697429.80	N 32 17 44.81	W 103 49 41.39
	17500.00	89.74	47.52	11097.76	7770.76	6603.56	4459.65	4870.16	0.00	0.00	0.00	471772.55	697503.54	N 32 17 45.47	W 103 49 40.53
	17600.00	89.74	47.52	11098.21	7771.21	6703.56	4527.18	4943.91	0.00	0.00	0.00	471840.08	697577.28	N 32 17 46.14	W 103 49 39.67
	17700.00	89.74	47.52	11098.67	7771.67	6803.56	4594.72	5017.66	0.00	0.00	0.00	471907.61	697651.03	N 32 17 46.80	W 103 49 38.80
	17800.00	89.74	47.52	11099.12	7772.12	6903.55	4662.25	5091.41	0.00	0.00	0.00	471975.14	697724.77	N 32 17 47.47	W 103 49 37.94
	17900.00	89.74	47.52	11099.58	7772.58	7003.55	4729.79	5165.16	0.00	0.00	0.00	472042.67	697798.52	N 32 17 48.13	W 103 49 37.08
	17992.60	89.74	47.52	11100.00	7773.00	7096.15	4792.32	5233.45	0.00	0.00	0.00	472105.20	697866.80	N 32 17 48.75	W 103 49 36.28

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	28.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / Cimarex Sandy Federal #22H Rev4 RJS
	28.000	17992.596	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Sandy Federal #22H Rev4 RJS



Cimarex Sandy Federal #22H Rev4 RJS 09-Sep-13 Proposal Report

(Def Plan)



Report Date: September 09, 2013 - 12:10 PM
 Client: Cimarex
 Field: NM Eddy County (NAD 83)
 Structure / Slot: NorAm 23 / Cimarex Sandy Federal #22H
 Well: Cimarex Sandy Federal #22H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Sandy Federal #22H Rev4 RJS 09-Sep-13
 Survey Date: January 29, 2013
 Tort / AHD / DDI / ERD Ratio: 99.749 ° / 7156.903 ft / 6.063 / 0.645
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 17' 1.56837", W 103° 50' 37.50362"
 Location Grid N/E Y/X: N 467313.200 RUS, E 692633.700 RUS
 CRS Grid Convergence Angle: 0.2615 °
 Grid Scale Factor: 0.99993531

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 47.519 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: KB
 TVD Reference Elevation: 3327.000 ft above
 Seabed / Ground Elevation: 3299.000 ft above
 Magnetic Declination: 7.553 °
 Total Gravity Field Strength: 998.5014mgn (9.80665 Based)
 Total Magnetic Field Strength: 48386.964 nT
 Magnetic Dip Angle: 60.128 °
 Declination Date: September 03, 2013
 Magnetic Declination Model: BGGM 2013
 North Reference: Grid North
 Grid Convergence Used: 0.2615 °
 Total Corr Mag North->Grid North: 7.2914 °

Local Coord Referenced To: Structure Reference Point

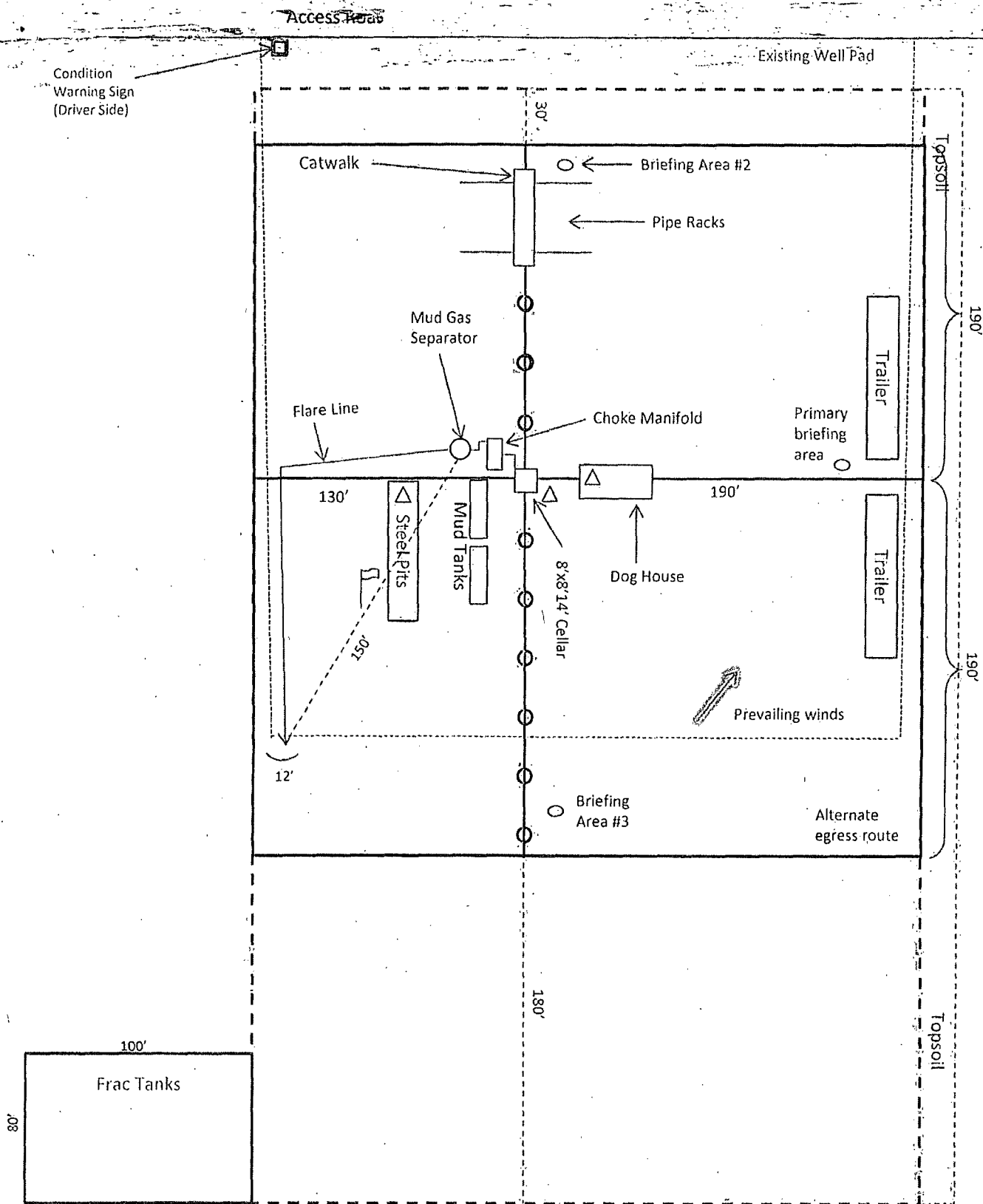
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	BR ("/100ft)	TR ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Cimarex Sandy Federal #22H SHL	0.00	0.00	227.52	0.00	-3327.00	0.00	0.00	0.00	N/A	N/A	N/A	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
Nudge SW @ 1.5"/100' DLS	6850.00	0.00	227.52	6850.00	3523.00	0.00	0.00	0.00	0.00	0.00	0.00	467313.20	692633.70	N 32 17 1.57	W 103 50 37.50
Hold for 15' MD	7183.33	5.00	227.52	7182.91	3855.91	-14.54	-9.82	-10.72	1.50	1.50	0.00	467303.38	692622.98	N 32 17 1.47	W 103 50 37.63
Drop to Vertical @ 1.5"/100' DLS	7198.33	5.00	227.52	7197.85	3870.85	-15.84	-10.70	-11.68	0.00	0.00	0.00	467302.50	692622.02	N 32 17 1.46	W 103 50 37.64
Hold Vertical to KOP	7531.67	0.00	227.52	7530.76	4203.76	-30.38	-20.52	-22.40	1.50	-1.50	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
KOP - Build 12"/100' DLS Curve	10593.50	0.00	227.52	10592.60	7265.60	-30.38	-20.52	-22.40	0.00	0.00	0.00	467292.69	692611.30	N 32 17 1.37	W 103 50 37.77
Landing Point	11341.28	89.74	47.52	11070.00	7743.00	444.90	300.45	328.12	12.00	12.00	0.00	467613.63	692961.80	N 32 17 4.53	W 103 50 33.67
TD	17992.60	89.74	47.52	11100.00	7773.00	7096.15	4792.32	5233.45	0.00	0.00	0.00	472105.20	697866.80	N 32 17 48.75	W 103 49 36.28

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95,000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	17992.596		30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Sandy Federal #22H Rev4 RJS



- Wind Direction Indicators (wind sock or streamers)
- H2S Monitors (alarms at bell nipple and shale shaker)
- △ Briefing Areas
- Planned wells

Note: All wellhead equipment is to be set below ground level to provide rig moving flexibility and safety.



Exhibit D – Rig Diagram
Sandy Federal 22H
 Cimarex Energy Co.
 SHL 195 FSL & 250 FEL; 23-23S-30E
 BHL 330 FNL & 330 FEL; 24-23S-30E
 Eddy County, NM

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Company
LEASE NO.:	NMNM-114356
WELL NAME & NO.:	Sandy Federal 22H
SURFACE HOLE FOOTAGE:	0195' FSL & 0250' FEL
BOTTOM HOLE FOOTAGE:	0330' FNL & 0330' FEL Sec. 24, T. 23 S., R 30 E.
LOCATION:	Section 23, T. 23 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

A. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi.**
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M) psi. 5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

CRW 060314